

January 2009

ELECTRONIC HEALTH RECORDS

DOD's and VA's Sharing of Information Could Benefit from Improved Management



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Why GAO Did This Study

Under the National Defense Authorization Act for Fiscal Year 2008, the Department of Defense (DOD) and the Department of Veterans Affairs (VA) are required to accelerate the exchange of health information between the departments and to develop systems or capabilities that allow for interoperability (generally, the ability of systems to exchange data) and that are compliant with federal standards. The Act also established a joint interagency program office to function as a single point of accountability for the effort, which is to implement such systems or capabilities by September 30, 2009.

Further, the Act required that GAO semi-annually report on the progress made in achieving these goals. For this second report, GAO evaluates the departments' progress and plans toward sharing electronic health information that comply with federal standards, and whether the interagency program office is positioned to function as a single point of accountability. To do so, GAO reviewed its past work, analyzed agency documentation, and conducted interviews.

What GAO Recommends

GAO is recommending that the departments develop results-oriented performance goals and measures to be used as the basis for reporting interoperability progress. Commenting on a draft of this report, DOD and VA concurred with GAO's recommendations.

ELECTRONIC HEALTH RECORDS

DOD's and VA's Sharing of Information Could Benefit from Improved Management

What GAO Found

DOD and VA continue to increase health information sharing through ongoing initiatives and related activities. Specifically, the departments' are now exchanging pharmacy and drug allergy data on over 21,000 shared patients, an increase of about 2,700 patients between June and October 2008. Further, they recently expanded the number of standards and specifications with which they expect their interoperability initiatives will comply. In addition, DOD reported that it received certification of its electronic health record system. Also, the departments have defined their plans to further increase their sharing of electronic health information. In particular, they have identified the Joint Executive Council Strategic Plan and the DOD/VA Information Interoperability Plan as the key documents defining their planned efforts to provide interoperable health records. These plans identify various objectives and activities that, according to the departments, are aimed at increasing health information sharing and achieving full interoperability, as required by the National Defense Authorization Act for Fiscal Year 2008. However, neither plan identifies results-oriented (i.e., objective, quantifiable, and measurable) performance goals and measures that are characteristic of effective planning and can be used as a basis to track and assess progress toward the delivery of new interoperable capabilities. In the absence of results-oriented goals and performance measures, the departments are not positioned to adequately assess progress toward increasing interoperability. Instead, DOD and VA are limited to assessing progress in terms of activities completed and increases in data exchanged (e.g., the number of patients for which certain types of data are exchanged).

The departments have continued to take steps to set up the interagency program office. For example, they have developed descriptions for key positions and agreed with GAO's July 2008 recommendation that they give priority to establishing permanent leadership and hiring staff. Also, the departments developed the program office organization structure document that depicts the office's organization and, in January 2009, the departments approved a program office charter to describe, among other things, the mission and function of the office. Nonetheless, DOD and VA have not yet fully executed their plan to set up the program office. For example, among other activities, they have not yet filled key positions for the Director and Deputy Director, or 22 of 30 other positions identified for the office. In the continued absence of a fully established program office, the departments will remain ineffectively positioned to assure that interoperable electronic health records and capabilities are achieved by the required date.

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Abbreviations

AHLTA	Armed Forces Health Longitudinal Technology Application
BHIE	Bidirectional Health Information Exchange
CDR	Clinical Data Repository
CHCS	Composite Health Care System
CHDR	interface between DOD's CDR and VA's HDR
CIS	Clinical Information System
DOD	Department of Defense
FHIE	Federal Health Information Exchange
HDR	Health Data Repository
HHS	Department of Health and Human Services
IT	information technology
VA	Department of Veterans Affairs
VistA	Veterans Health Information Systems and Technology Architecture

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United States Government Accountability Office
Washington, DC 20548

January 28, 2009

Congressional Committees

As you are aware, the Department of Defense (DOD) and the Department of Veterans Affairs (VA) have, for over a decade, pursued initiatives to share data between their health information systems. The departments' efforts have included working toward a long-term vision of a single "comprehensive, lifelong medical record"¹ that would enable each service member to transition seamlessly between the two departments, as well as more short-term efforts focused on meeting immediate needs to share health information, including responding to current military crises.

However, while important steps have been taken, questions have remained concerning when and to what extent the intended electronic sharing capabilities of the two departments will be fully achieved, prompting continuing calls for progress in the sharing of essential health information. Among these, a presidential task force recommended in May 2003 that DOD and VA develop and deploy bidirectional electronic health records by fiscal year 2005. Further, in July 2007, the President's Commission on Care for America's Returning Wounded Warriors reported that the departments had continued to develop independent, stand-alone systems and recommended that DOD and VA move rapidly to make all essential health information available to clinicians.²

More recently, to expedite the departments' efforts to exchange electronic health information, the National Defense Authorization Act for Fiscal Year 2008³ included provisions directing DOD and VA to jointly develop and implement, by September 30, 2009, fully interoperable electronic health

¹In 1996, the Presidential Advisory Committee on Gulf War Veterans' Illnesses reported on many deficiencies in VA's and DOD's data capabilities for handling service members' health information. In November 1997, the President called for the two agencies to start developing a "comprehensive, lifelong medical record for each service member," and in August 1998 issued a directive requiring VA and DOD to develop a "computer-based patient record system that will accurately and efficiently exchange information."

²The commission recommended that DOD and VA work toward a "fully interoperable information system that will meet the long-term administrative and clinical needs of all military personnel over time."

³The National Defense Authorization Act for Fiscal Year 2008, Pub. L. No. 110-181, Section 1635 (Jan. 28, 2008).

record systems or capabilities. The Act required that these systems or capabilities be compliant with applicable interoperability⁴ standards of the federal government, and it established an interagency program office to be a single point of accountability for the departments' efforts.

In addition, the Act directed GAO to assess DOD's and VA's progress in implementing the electronic health record systems and to report semiannually its results to the appropriate congressional committees. Accordingly, on July 28, 2008, we issued the first of our reports in response to the Act.⁵ Further, we subsequently testified on this report in September 2008.⁶ As agreed with the committees of jurisdiction, our objectives for this second report are to (1) evaluate the departments' progress and plans toward developing electronic health record systems or capabilities that allow for full interoperability and comply with applicable federal interoperability standards and (2) determine whether the interagency program office established by the National Defense Authorization Act for Fiscal Year 2008 is positioned to function as a single point of accountability for developing and implementing electronic health records.

To carry out these objectives, we reviewed our past work in this area;⁷ analyzed current agency documentation (including plans for achieving interoperability, actions accomplished or planned to establish the interagency program office, and program documentation for interoperability standards); and conducted interviews with officials from

⁴Interoperability is the ability of two or more systems or components to exchange information and to use the information that has been exchanged. Further discussion of levels of interoperability is provided later in this report.

⁵See GAO, *Electronic Health Records: DOD and VA Have Increased Their Sharing of Health Information, but More Work Remains*, [GAO-08-954](#) (Washington, D.C.: July 28, 2008). In this report, we highlighted the departments' progress in sharing electronic health information, developing electronic records that comply with national standards, and setting up the interagency program office.

⁶See GAO, *Information Technology: DOD and VA Have Increased Their Sharing of Health Information, but Further Actions Are Needed*, [GAO-08-1158T](#) (Washington, D.C.: Sept. 24, 2008). In this testimony, we noted that DOD and VA have increased their sharing of health information, but still face significant work to plan and implement new capabilities that could further increase electronic health information sharing between the departments and to determine the desired level of data interoperability.

⁷See *Related GAO Products* at the end of this report for previous GAO reports and testimonies on DOD/VA health information sharing and national health information technology issues.

DOD, VA, and the Department of Health and Human Services' Office of the National Coordinator for Health Information Technology.

We conducted this performance audit from August 2008 through January 2009, in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. For more details on our scope and methodology, see appendix I.

Results in Brief

DOD and VA continue to increase sharing of their electronic health information. For example, the departments stated that they are exchanging computable pharmacy and drug allergy data on over 21,000 shared patients, an increase of about 2,700 patients between June and October 2008.⁸ The departments also recently expanded the number of standards and specifications with which they expect their interoperability initiatives will comply, and DOD reported that it has received certification of its electronic health record system. In addition, the departments have continued to define their plans to further increase their sharing of electronic health information. In particular, they have identified the November 2007 Joint Executive Council Strategic Plan for Fiscal Years 2008-2010 and the September 2008 DOD/VA Information Interoperability Plan (Version 1.0) as the key documents defining their planned efforts to provide interoperable health records. These plans identify various objectives and activities that are aimed at increasing health information sharing and achieving full interoperability, as required by the Act. For example, the Information Interoperability Plan identifies six objectives that are intended to be met by September 30, 2009, including an expanded capability to increase the sharing of inpatient discharge summaries at additional DOD sites. However, while the plans discussed objectives and activities to increase information sharing, neither included results-oriented goals and performance measures that are characteristic of effective planning and can be used as a basis to track and measure progress toward the delivery of the interoperable capabilities the departments plan to establish by September 30, 2009. In the absence of results-oriented goals

⁸In our July 2008 report, we noted that the departments were exchanging pharmacy and drug allergy data on more than 18,300 shared patients as of June 2008.

and performance measures, the departments are not positioned to adequately assess progress toward achieving increased interoperability and can only report the completion of activities and indicate increases in data exchanged. In discussing the absence of results-oriented performance goals and measures, DOD and VA officials stated that their plans represent their initial efforts to articulate interoperability goals. Until the departments establish results-oriented goals and performance measures, they will be limited in their ability to assess their progress and ensure that they are taking the necessary steps to achieve their interoperability goals.

The Act called for the establishment of an interagency program office to be accountable for implementing electronic health record systems or capabilities that allow for full interoperability of personal health care information between DOD and VA. As we previously reported,⁹ the departments had planned to set up this office by December 2008. The departments have continued to take steps to set up the office. For example, they have developed descriptions for key positions and agreed with our July 2008 recommendation that they give priority to establishing permanent leadership and hiring staff. Also, the departments developed the program office organization structure document that depicts the office's organization and, in January 2009, the departments approved a program office charter to describe, among other things, the mission and function of the office. However, they have not yet fully executed their plan for doing so. For example, among other activities, they have not yet filled key positions for the Director and Deputy Director, or 22 of 30 other positions identified for the office. In the continued absence of a fully established program office, the departments will remain ineffectively positioned to ensure that interoperable electronic health records and capabilities are achieved by the required date.

To better ensure the successful attainment of interoperable electronic health record systems or capabilities, we are recommending that the Secretaries of Defense and Veterans Affairs develop and document results-oriented goals and performance measures for the departments' interoperability plans and that they use such plans as the basis for measuring and reporting progress.

The Assistant Secretary of Defense and the Secretary of Veterans Affairs provided written comments on a draft of this report, which are reproduced

⁹[GAO-08-954](#).

in app. II and app. III, respectively. In the comments, the departments concurred with the report's recommendations. DOD and VA stated that high priority will be given to the establishment and use of results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the departments' interoperability objectives and documentation of these goals in interoperability plans. If the recommendations are properly implemented, they should better position DOD and VA to effectively measure and report progress in achieving interoperability.

Background

The use of information technology (IT) to electronically collect, store, retrieve, and transfer clinical, administrative, and financial health information has great potential to help improve the quality and efficiency of health care and is important to improving the performance of the U.S. health care system. Historically, patient health information has been scattered across paper records kept by many different caregivers in many different locations, making it difficult for a clinician to access all of a patient's health information at the time of care. Lacking access to these critical data, a clinician may be challenged to make the most informed decisions on treatment options, potentially putting the patient's health at greater risk. The use of electronic health records can help provide this access and improve clinical decisions.¹⁰

Electronic health records are particularly crucial for optimizing the health care provided to military personnel and veterans. While in military status and later as veterans, many DOD and VA patients tend to be highly mobile and may have health records residing at multiple medical facilities within and outside the United States. Making such records electronic can help ensure that complete health care information is available for most military service members and veterans at the time and place of care, no matter where it originates.

Key to making health care information electronically available is interoperability—that is, the ability to share data among health care providers. Interoperability enables different information systems or components to exchange information and to use the information that has

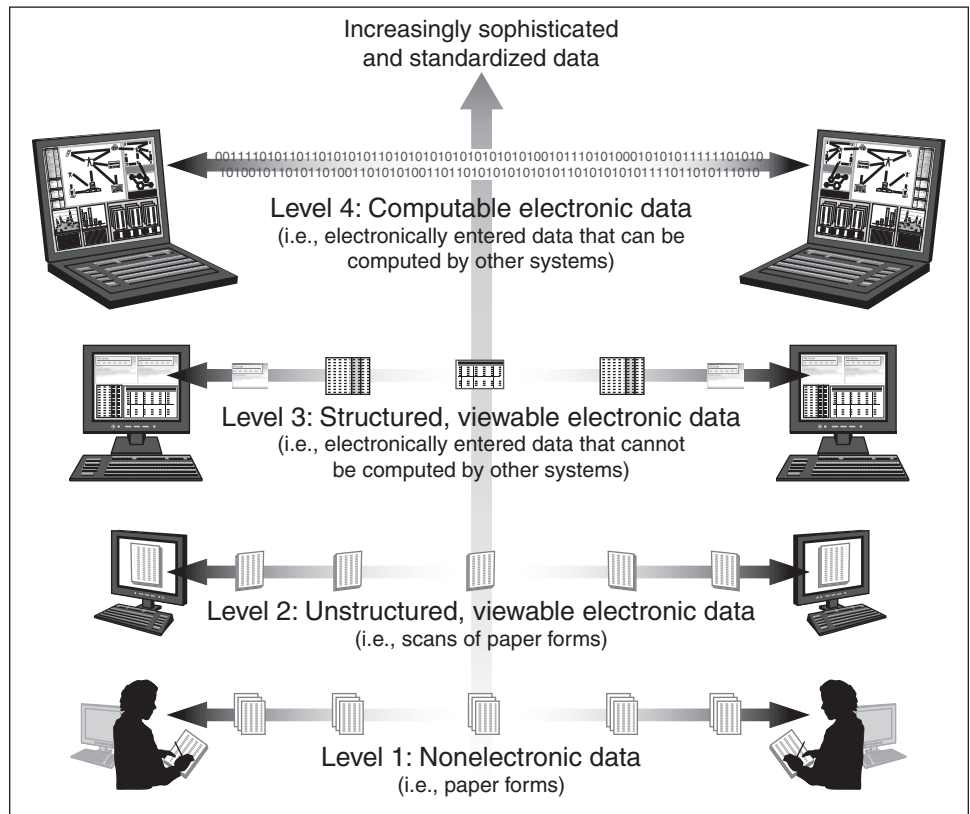
¹⁰ An electronic health record is a collection of information about the health of an individual or the care provided, such as patient demographics, progress notes, problems, medications, vital signs, past medical history, immunizations, laboratory data, and radiology reports.

been exchanged. This capability is important because it allows patients' electronic health information to move with them from provider to provider, regardless of where the information originated. If electronic health records conform to interoperability standards, they can be created, managed, and consulted by authorized clinicians and staff across more than one health care organization, thus providing patients and their caregivers the necessary information required for optimal care. (Paper-based health records—if available—also provide necessary information, but unlike electronic health records, paper records do not provide decision support capabilities, such as automatic alerts about a particular patient's health, or other advantages of automation.)

Interoperability can be achieved at different levels.¹¹ At the highest level, electronic data are computable (that is, in a format that a computer can understand and act on to, for example, provide alerts to clinicians on drug allergies). At a lower level, electronic data are structured and viewable, but not computable. The value of data at this level is that they are structured so that data of interest to users are easier to find. At still a lower level, electronic data are unstructured and viewable, but not computable. With unstructured electronic data, a user would have to find needed or relevant information by searching uncategorized data. Beyond these, paper records also can be considered interoperable (at the lowest level) because they allow data to be shared, read, and interpreted by human beings. Figure 1 shows the distinctions between the various levels of interoperability and examples of the types of data that can be shared at each level.

¹¹These levels were identified by the Center for Information Technology Leadership, which was chartered in 2002 as a research organization established to help guide the health care community in making more informed strategic IT investment decisions. According to DOD and VA, the different levels of interoperability have been accepted for use by the Office of the National Coordinator for Health Information Technology.

Figure 1: Levels of Data Interoperability



Source: GAO analysis based on data from the Center for Information Technology Leadership.

According to DOD and VA officials, not all data require the same level of interoperability. For example, in their initial efforts to implement computable data, DOD and VA focused on outpatient pharmacy and drug allergy data because clinicians gave priority to the need for automated alerts to help medical personnel avoid administering inappropriate drugs to patients. On the other hand, for such narrative data as clinical notes, unstructured, viewable data may be sufficient. Achieving even a minimal level of electronic interoperability is valuable for potentially making all relevant information available to clinicians.

Efforts to Adopt and Implement Federal Interoperability Standards Are Ongoing

Interoperability depends on adherence to common standards to promote the exchange of health information between participating agencies and with nonfederal entities in supporting quality and efficient health care. In the health IT field, standards govern areas ranging from technical issues,

such as file types and interchange systems, to content issues, such as medical terminology. Developing, coordinating, and agreeing on standards are only part of the processes involved in achieving interoperability for electronic health record systems or capabilities. In addition, specifications are needed for implementing the standards, as well as criteria and a process for verifying compliance with the standards.

In April 2004, the President called for widespread adoption of interoperable electronic health records by 2014.¹² The executive order established the Office of the National Coordinator for Health Information Technology within the Department of Health and Human Services (HHS). This office has been tasked to, among other things, develop, maintain, and direct the implementation of a strategic plan to guide the nationwide implementation of interoperable health IT in both the public and private health care sectors. Under the direction of HHS (through the Office of the National Coordinator), three primary organizations were designated to play major roles in expanding the implementation of health IT:

- The American Health Information Community was created by the Secretary of HHS as a federal advisory body to make recommendations on how to accelerate the development and adoption of health IT, including advancing interoperability, identifying health IT standards, advancing a nationwide health information exchange, and protecting personal health information. Formed in September 2005, the community is made up of representatives from both the public and private sectors, including high-level DOD and VA officials. The community determines specific health care areas of high priority and develops “use cases”¹³ for these areas, which provide the context in which standards would be applicable. The use cases convey how health care professionals would use such records and what standards would apply.

¹²Executive Order 13335, Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator (Washington, D.C.: Apr. 27, 2004).

¹³Use cases are descriptions of events that detail what a system (or systems) needs to do to achieve a specific mission or goal; they convey how individuals and organizations (actors) interact with the systems. For health IT, use cases strive to provide enough detail and context for follow-up activities to occur, such as standards harmonization, architecture specification, certification consideration, and detailed policy discussions to advance the national health IT agenda.

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- The Healthcare Information Technology Standards Panel, sponsored by the American National Standards Institute¹⁴ and funded by the Office of the National Coordinator, was established in October 2005 as a public-private partnership to identify competing standards for the use cases being developed by the American Health Information Community and to “harmonize”¹⁵ the standards. The panel also develops the interoperability specifications that are needed for implementing the standards. Interoperability specifications were developed for each of the seven use cases developed by the American Health Information Community in 2006 and 2007.¹⁶ The community also developed six use cases for 2008.¹⁷ The Healthcare Information Technology Standards Panel is made up of representatives from both the public and private sectors, including DOD and VA officials who serve as members and are actively working on several committees and groups within the panel.
 - The Certification Commission for Healthcare Information Technology is an independent, nonprofit organization that creates certification criteria to determine whether health IT systems meet standards accepted or recognized by the Secretary of HHS, and then certifies systems that meet those criteria. HHS entered into a contract with the commission in October 2005 to develop and evaluate the certification criteria and inspection process for electronic health records. Certification helps assure purchasers and other users of health IT systems that the systems will provide needed capabilities (including ensuring security and confidentiality) and will work with other systems without reprogramming. Certification also encourages adoption of health IT by assuring providers that their systems can participate in a nationwide health information exchange in the future.

¹⁴The American National Standards Institute is a private, nonprofit organization whose mission is to promote and facilitate voluntary consensus standards and ensure their integrity.

¹⁵Harmonization is the process of identifying overlaps and gaps in relevant standards and developing recommendations to address these overlaps and gaps.

¹⁶The seven use cases are Emergency Responder; Consumer Empowerment; Medication Management; Quality; Registration and Medication History; Laboratory Results Reporting; and Visit, Utilization, and Lab Result Data.

¹⁷The six use cases are Remote Monitoring, Patient-Provider Secure Messaging, Personalized Healthcare, Consultation and Transfers of Care, Public Health Case Reporting, and Immunizations and Response Management.

DOD and VA Have Been Pursuing Efforts to Exchange Health Information for Over a Decade

DOD and VA have been working to exchange patient health data electronically since 1998. As we have previously noted,¹⁸ their efforts have included both short-term initiatives to share information in existing (legacy) systems, as well as a long-term initiative to develop modernized health information systems—replacing their legacy systems—that would be able to share data and, ultimately, use interoperable electronic health records.

In their short-term initiatives to share information from existing systems, the departments began from different positions. VA has one integrated medical information system—the Veterans Health Information Systems and Technology Architecture (VistA)—which uses all electronic records and was developed in-house by VA clinicians and IT personnel. All VA medical facilities have access to all VistA information.

In contrast, DOD uses multiple legacy medical information systems, all of which are commercial software products that are customized for specific uses. For example, the Composite Health Care System (CHCS), which was formerly DOD’s primary health information system, is still in use to capture pharmacy, radiology, and laboratory information.¹⁹ In addition, the Clinical Information System (CIS), a commercial health information system customized for DOD, is used to support inpatient treatment at military medical facilities.

The departments’ short-term initiatives to share information in their existing systems have included the following projects:

- The Federal Health Information Exchange (FHIE), completed in 2004, enables DOD to electronically transfer service members’ electronic health information to VA when the members leave active duty.
- The Bidirectional Health Information Exchange (BHIE), also established in 2004, was aimed at allowing clinicians at both departments viewable access to records on shared patients (that is, those who receive care from both departments—for example, veterans may receive outpatient care from VA clinicians and be hospitalized at a

¹⁸ [GAO-08-954](#).

¹⁹ According to DOD, CHCS applications are now accessed through its modernized health information system, Armed Forces Health Longitudinal Technology Application (AHLTA). The department no longer considers AHLTA as an acronym but as the official name of the system.

military treatment facility).²⁰ The interface also allows DOD sites to see previously inaccessible data at other DOD sites.

As part of the long-term initiative, each of the departments aims to develop a modernized system in the context of a common health information architecture that would allow a two-way exchange of health information. The common architecture is to include standardized, computable data; communications; security; and high-performance health information systems: DOD's Armed Forces Health Longitudinal Technology Application (AHLTA)²¹ and VA's HealtheVet. The departments' modernized systems are to store information (in standardized, computable form) in separate data repositories: DOD's Clinical Data Repository (CDR) and VA's Health Data Repository (HDR). For the two-way exchange of health information, in September 2006 the departments implemented an interface named CHDR,²² to link the two repositories.

Beyond these initiatives, in January 2007, the departments announced their intention to jointly determine an approach for inpatient health records. On July 31, 2007, they awarded a contract for a feasibility study and exploration of alternatives. In December 2008, the contractor provided the departments with a recommended strategy for jointly developing an inpatient solution.

²⁰To create BHIE, the departments drew on the architecture and framework of the information transfer system established by the FHIE project. Unlike FHIE, which provides a one-way transfer of information to VA when a service member separates from the military, the two-way interface allows clinicians in both departments to view, in real time, limited health data (in text form) from the departments' existing health information systems.

²¹AHLTA was formerly known as CHCS II.

²²The name CHDR, pronounced "cheddar," combines the names of the two repositories.

GAO's Recent Report
Highlighted DOD's and VA's
Efforts to Share Health
Information and Identified
the Need to Set Up the
Program Office and
Finalize the
Implementation Plan

In reporting on the departments' progress toward developing fully interoperable electronic health records in July 2008,²³ we highlighted several findings:

- DOD and VA had established and implemented mechanisms to achieve sharing of electronic health information at different levels of interoperability. As of June 2008, pharmacy and drug allergy data on about 18,300 shared patients were being exchanged at the highest level of interoperability—that is, in computable form, a standardized format that a computer application can act on (for example, to provide alerts to clinicians of drug allergies). Viewable data also were being shared including, among other types, outpatient pharmacy data, allergy information, procedures, problem lists, vital signs, microbiology results, cytology reports, and chemistry and hematology reports. However, the departments were not sharing all electronic health data, including for example, immunization records and history, data on exposure to health hazards, and psychological health treatment and care records. Finally, although VA's health information was all captured electronically, not all health data collected by DOD were electronic—many DOD medical facilities used paper-based health records.
- DOD and VA were participating in a number of initiatives led by the Office of the National Coordinator for Health Information Technology (within HHS), aimed at promoting the adoption of federal standards and broader use of electronic health records. The involvement of the departments in these initiatives was an important mechanism for aligning their electronic health records with emerging standards. The departments also had jointly published a common (agreed to) set of interoperability standards called the Target DOD/VA Health Standards Profile. Updated annually, the profile was used for reviewing joint DOD/VA initiatives to ensure standards compliance. The departments anticipate such updates and revisions to the profile as additional federal standards emerge and are recognized and accepted by HHS. In addition, according to DOD officials, the department was taking steps to ensure that its modernized health information system, AHLTA, was compliant with standards by arranging for certification through the Certification Commission for Healthcare Information Technology. Specifically, version 3.3 of AHLTA was conditionally certified in April 2007 against 2006 outpatient electronic health record criteria

²³ [GAO-08-954](#).

established by the commission. DOD officials stated that AHLTA version 3.3 was installed at three DOD locations.²⁴

- The departments' efforts to set up the DOD/VA Interagency Program Office were still in their early stages. Leadership positions in the office had not been permanently filled, staffing was not complete, and facilities to house the office had not been designated. According to the Acting Director, DOD and VA had begun developing a charter for the office, but had not yet completed the document. Further, the implementation plan was in draft, and although it included schedules, milestones for several activities were not determined (such as implementing a capability to share immunization records), even though all capabilities were to be achieved by September 2009. We pointed out that without a fully established program office and a finalized implementation plan with set milestones, the departments might be challenged in meeting the September 2009 date for achieving interoperable electronic health records and capabilities. As a result, we recommended that the Secretaries of Defense and Veterans Affairs give priority to fully establishing the interagency program office and finalizing the draft implementation plan. Both DOD and VA agreed with these recommendations.

DOD and VA Report Continued Progress toward Increased Interoperability; however, Plans Lack Results-Oriented Performance Goals and Measures

Since our July 2008 report and September 2008 testimony, DOD and VA have continued to make progress toward increased interoperability through ongoing initiatives and activities documented in their plans related to increasing information sharing efforts. Also, the departments recently expanded the number of standards and specifications with which they expect their interoperability initiatives will comply. However, the departments' plans lack results-oriented (i.e., objective, quantifiable, and measurable) performance goals and measures that are characteristic of effective planning. As a result, the extent to which the departments' progress can be assessed and reported in terms of results achieved is largely limited to reporting on activities completed and increases in interoperability over time. Consequently, it is unclear what health information sharing capabilities will be delivered by September 2009.

With regard to their ongoing initiatives, DOD and VA reported increases in data exchanged between the departments for their long-term initiative

²⁴These sites are the Naval Medical Center in Portsmouth, Va.; Eisenhower Army Medical Center in Fort Gordon, Ga.; and Goodfellow Air Force Base in San Angelo, Tex.

(CHDR) and their short-term initiative (BHIE). For example, between June and October 2008, the departments increased the number of shared patients for which computable outpatient pharmacy and drug allergy data were being exchanged through the CHDR initiative by about 2,700 (from about 18,300 to over 21,000). For the BHIE initiative, the departments continued to expand their information exchange by sharing viewable patient vital signs information in June 2008, and demonstrated the capability to exchange family history, social history, other history, and questionnaires data in September 2008.

Since we last reported,²⁵ DOD and VA also have made progress toward adopting additional health data interoperability standards that are newly recognized and accepted by the Secretary of HHS. The departments have identified these new standards, which relate to three use cases in the updated September 2008 Target Standards Profile. Specifically, the profile now includes Electronic Health Records Laboratory Results Reporting, Biosurveillance, and Consumer Empowerment use cases. According to DOD and VA officials, the adoption of recognized standards is a goal of both departments in order to comply with the provisions set forth in the National Defense Authorization Act for Fiscal Year 2008. In addition, DOD has reported progress toward certification of its health IT system in adhering to applicable standards. Department officials stated that AHLTA version 3.3 is now fully operational and certified at five DOD locations,²⁶ having met certification criteria, including specific functionality, interoperability, and security requirements. According to DOD officials, this version of AHLTA is expected to be installed at the remaining locations by September 30, 2009.

DOD and VA have also reported progress relative to two plans that contain objectives, initiatives, and activities related to further increasing health information sharing. Specifically, the departments have identified the November 2007 VA/DOD Joint Executive Council Strategic Plan for Fiscal Years 2008-2010 (known as the VA/DOD Joint Strategic Plan) and the September 2008 DOD/VA Information Interoperability Plan (Version 1.0) as defining their efforts to provide interoperable health records. The Joint

²⁵ [GAO-08-954](#).

²⁶ These locations are the Naval Medical Center in Portsmouth, Va.; Goodfellow Air Force Base in San Angelo, Tex; U.S. Naval Hospital, Naples, Italy; Wright Patterson Air Force Base in Dayton, Ohio; and U.S. Army Installation Management Command at Fort Huachuca, Ariz.

Strategic Plan identified 39 activities related to information sharing that the departments planned to complete by September 30, 2008. The Information Interoperability Plan describes six objectives to be met by September 30, 2009.

The departments reported that the 39 information sharing activities identified in the Joint Strategic Plan were completed on or ahead of schedule. For example, the departments completed a report on the analysis of alternatives and recommendations for the development of the joint inpatient electronic health record,²⁷ and briefed the recommendations to the Health Executive Council and the Joint Executive Council.²⁸ However, only 3 of the 39 activities in the Joint Strategic Plan were described in results-oriented (i.e., objective, quantifiable, and measurable) terms that are characteristic of effective planning and can be used as a basis to track and measure progress toward the delivery of new interoperable capabilities. For example, among these three, one of the activities called for the departments to share viewable vital signs data in real-time and bidirectional for shared patients among all sites by June 30, 2008. In contrast, 36 activities lacked results-oriented performance measures, limiting the extent to which progress can be reported in terms of results achieved. For example, one activity calls for the development of a plan for interagency sharing of essential health images, but does not provide details on measurable achievement of additional interoperable capabilities. Another activity calls for the review of national health IT standards, but does not provide a tangible deliverable to determine progress in achieving the goal.

²⁷ A contractor, tasked to study the issue, recommended that the departments should invest in a common services strategy for jointly developing an inpatient solution. Common services are administrative computer services, such as messaging and security, on which application software can call as needed. Such services are used in service-oriented architectures, in which application software locates, selects, and uses separately provided software services that it needs to perform its intended function.

²⁸ The Joint Executive Council is comprised of the Deputy Secretary of Veterans Affairs; the Under Secretary of Defense for Personnel and Readiness; and the cochair of joint councils on health, benefits, and capital planning. The council meets on a quarterly basis to recommend strategic direction of joint coordination and sharing efforts. The VA/DOD Health Executive Council is comprised of senior leaders from VA and DOD, who work to institutionalize sharing and collaboration of health services and resources. The council is cochaired by the VA Under Secretary for Health and DOD Assistant Secretary of Defense for Health Affairs, and meets on a bimonthly basis.

According to department officials, DOD and VA have activities underway to address the six interoperability objectives included in the Information Interoperability Plan. Among these objectives, one calls for DOD to deploy its inpatient solution at additional medical sites to expand sharing of inpatient discharge summaries. Department officials indicated that, as of December 2008, DOD is sharing patient discharge summaries at 50 percent of inpatient beds compared to their goal of 70 percent by September 30, 2009. However, this is the only one of six objectives in the Information Interoperability Plan with an associated results-oriented performance measure. None of the remaining five objectives are documented in terms that could allow the departments to measure and report their progress toward delivering new capabilities. Specifically, the objective for scanning medical documents calls for providing an initial capability. However, “initial capability” is not defined in quantifiable terms. As such, this objective cannot be used as a basis to effectively measure results-oriented performance.

According to DOD and VA officials, their plans are relatively new and represent their initial efforts to articulate interoperability goals. However, while the departments’ plans identify interoperable capabilities to be implemented, the plans do not establish the results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures that are a necessary basis for effective management. Without establishing plans that include results-oriented goals, then reporting progress using measures relative to the plans, the departments and their stakeholders do not have the comprehensive information that they need to effectively manage their progress toward achieving increased interoperability.

Steps Have Been Taken to Set Up the DOD/VA Interagency Program Office, but It Is Not Positioned to Function as a Single Point of Accountability

The National Defense Authorization Act for Fiscal Year 2008 called for the establishment of an interagency program office and for the office to be accountable for implementing electronic health record systems or capabilities that allow for full interoperability of personal health care information between DOD and VA. Since we last reported, the departments have continued taking steps to set up the program office, although they have not yet fully executed their plan for doing so. As a result, the office is not yet in a position to be accountable for accelerating the departments’ efforts to achieve interoperability by the September 30, 2009 deadline.

To address the requirements set forth in the Act, the departments identified in the September 2008 DOD/VA Information Interoperability Plan a schedule for standing up the interagency program office. Consistent with the plan, the departments have taken steps, such as developing descriptions for key positions, including those of the Director and Deputy

Director. Further, the departments have begun to hire personnel for program staff positions. Specifically, out of 30 total program office positions, they have hired staff for 2 of 14 government positions, 6 of 16 contractor positions, and have actions underway to fill the remaining 22 positions. Also, since we reported in July 2008, the departments developed the program office organization structure document that depicts the program office's organization. Further, in December 2008, DOD issued a Delegation of Authority Memorandum, signed by the Deputy Secretary of Defense that formally recognizes the program office. In January 2009, the departments approved a program office charter to describe, among other things, the mission and function of the office.

Nonetheless, even with the actions taken, four of eight selected key activities that the departments identified in their plan to set up the program office remain incomplete, including filling the remaining 22 positions, in addition to those of the Director and Deputy Director (as shown in table 1).

Table 1: Status of Selected Key Activities to Establish the DOD/VA Interagency Program Office, as of January 2009

Interagency program office activities	Due date	Status
Appoint interim Acting Director and Acting Deputy Director	April 2008	Complete
Provide interim detailed staff, temporary space, and equipment	May 2008	Complete
Develop and approve the program office organization structure document to include mission, function, manpower, internal governance, accountability, and authority	June 2008	Complete
Develop and approve program office charter or interagency agreement	July 2008	Complete
Complete resource management plan to include budget, space, equipment, and human resources	July 2008	Not yet complete
Complete personnel position descriptions and rating schemes	August 2008	Not yet complete
Appoint permanent Director and Deputy Director	October 2008	Not yet complete
Advertise and recruit program staff	October 2008	Not yet complete

Source: GAO analysis of DOD and VA data.

DOD and VA officials stated that the reason the departments have not completed the execution of their plan to fully set up an interagency program office is the longer than anticipated time needed to obtain approval from multiple DOD and VA offices for key program office

documentation (for example, the delegation of authority memorandum and charter). They stated that this was because the departments' leadership broadened the program office's scope to include the sharing of personnel and benefits data in addition to health information.

Our July 2008 report recommended that the departments give priority to establishing the program office by establishing permanent leadership and hiring staff.²⁹ Without completion of these and other key activities to set up the program office, the office is not yet positioned to be fully functional, or accountable, for fulfilling the departments' interoperability plans. Coupled with the lack of results-oriented plans that establish program commitments in measurable terms, the absence of a fully operational interagency program office leaves DOD and VA without a clearly established approach for ensuring that their actions will achieve the desired purpose of the Act.

Conclusions

In the more than 10 years since DOD and VA began collaborating to electronically share health information, the two departments have increased interoperability. Nevertheless, while the departments continue to make progress, the manner in which they report progress—by reporting increases in interoperability over time—has limitations. These limitations are rooted in the departments' plans, which identify interoperable capabilities to be implemented, but lack the results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures that are a necessary basis for effective management. Without establishing results-oriented goals, then reporting progress using measures relative to the established goals, the departments and their stakeholders do not have the comprehensive picture that they need to effectively manage their progress toward achieving increased interoperability. Further constraining the departments' management effectiveness is their slow pace in addressing our July 2008 recommendation related to setting up the interagency program office that Congress called for to function as a single point of accountability in the development and implementation of electronic health record capabilities.

Recommendations for Executive Action

To better ensure that DOD and VA achieve interoperable electronic health record systems or capabilities, we recommend that the Secretaries of Defense and Veterans Affairs take the following two actions:

²⁹ [GAO-08-954](#).

Develop results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the departments' interoperability objectives and document these goals and measures in their interoperability plans.

Use results-oriented performance goals and measures as the basis for future assessments and reporting of interoperability progress.

Agency Comments and Our Evaluation

In providing written comments on a draft of this report in a January 22, 2009 letter, the Assistant Secretary of Defense for Health Affairs concurred with our recommendations. In a January 17, 2009 letter, the Secretary of Veterans Affairs also concurred with our recommendations. (The departments' comments are reproduced in app. II and app. III, respectively.) DOD and VA stated that high priority will be given to the establishment and use of results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the departments' interoperability objectives. If the recommendations are properly implemented, they should better position DOD and VA to effectively measure and report progress in achieving full interoperability. The departments also provided technical comments on the draft report, which we incorporated as appropriate.

We are sending copies of this report to the Secretaries of Defense and Veterans Affairs, appropriate congressional committees, and other interested parties. In addition, the report is available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have questions about this report, please contact me at (202) 512-6304 or melvinv@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix II.



Valerie C. Melvin
Director, Human Capital and Management
Information Systems Issues

List of Congressional Committees

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Chairman
The Honorable John McCain
Ranking Member
Committee on Armed Services
United States Senate

The Honorable Daniel K. Akaka
Chairman
The Honorable Richard M. Burr
Ranking Member
Committee on Veterans' Affairs
United States Senate

The Honorable Daniel K. Inouye
Chairman
The Honorable Thad Cochran
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

The Honorable Tim Johnson
Chairman
The Honorable Kay Bailey Hutchison
Ranking Member
Subcommittee on Military Construction,
Veterans' Affairs, and Related Agencies
Committee on Appropriations
United States Senate

The Honorable Ike Skelton
Chairman
The Honorable John M. McHugh
Ranking Member
Committee on Armed Services
United States House of Representatives

The Honorable Bob Filner
Chairman
The Honorable Steve Buyer
Ranking Member
Committee on Veterans' Affairs
United States House of Representatives

The Honorable John P. Murtha
Chairman
The Honorable C.W. Bill Young
Ranking Member
Subcommittee on Defense
Committee on Appropriations
United States House of Representatives

The Honorable Chet Edwards
Chairman
The Honorable Zach Wamp
Ranking Member
Subcommittee on Military Construction,
Veterans' Affairs, and Related Agencies
Committee on Appropriations
United States House of Representatives

Appendix I: Scope and Methodology

To evaluate the Department of Defense's (DOD) and the Department of Veterans Affairs' (VA) progress toward developing electronic health record systems or capabilities that allow for full interoperability of personal health care information, we reviewed our previous work on DOD and VA efforts to develop health information systems, interoperable health records, and interoperability standards to be implemented in federal health care programs. To describe the departments' efforts to ensure that their health records comply with applicable interoperability standards, we analyzed information gathered from DOD and VA documentation and interviews pertaining to the interoperability standards that the two departments have agreed to for exchanging health information via their health care information systems. We reviewed documentation and interviewed agency officials from the Department of Health and Human Services' Office of the National Coordinator for Health Information Technology to obtain information regarding the defined federal interoperability standards, implementation specifications, and certification criteria. Further, we interviewed responsible officials to obtain information regarding the steps taken by the departments to certify their electronic health record products.

To evaluate DOD and VA plans toward developing electronic health record systems or capabilities, we obtained information from agency documentation and interviews with cognizant DOD and VA officials pertaining to the November 2007 VA/DOD Joint Executive Council Strategic Plan for Fiscal Years 2008-2010, and the September 2008 DOD/VA Information Interoperability Plan (Version 1.0) which together constitute the departments' overall plans for achieving full interoperability of electronic health information. Additionally, we reviewed information gathered from agency documentation to identify interoperability objectives, milestones, and target dates. Further, we analyzed objectives and activities from their plans to determine if DOD and VA had established results-oriented performance measures that enable the departments to assess progress toward achieving increased sharing capabilities and functionality of their electronic health information systems.

To determine whether the interagency program office is fully operational and positioned to function as a single point of accountability for developing and implementing electronic health records, we analyzed DOD and VA documentation, including the schedule for setting up the office identified in the DOD/VA Information Interoperability Plan. Additionally, we interviewed responsible officials to determine the departments' progress to date in setting up the interagency program office. Further, we reviewed documentation and interviewed DOD and VA officials to

determine the extent to which the departments have positioned the office to function as a single point of accountability for developing electronic health records.

We conducted this performance audit at DOD sites and also the Department of Health and Human Services' Office of the National Coordinator for Health Information Technology in the greater Washington, D.C., metropolitan area from August 2008 through January 2009 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Comments from the Department of Defense



THE ASSISTANT SECRETARY OF DEFENSE

1200 DEFENSE PENTAGON
WASHINGTON, DC 20301-1200

HEALTH AFFAIRS

The Honorable Valerie C. Melvin
Director, Human Capital and
Management Information Systems Issues
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

JAN 22 2009

Dear Ms. Melvin,

The enclosed Department of Defense (DoD) response addresses recommendations from the Government Accountability Office (GAO) Draft Report, GAO-09-268, "ELECTRONIC HEALTH RECORDS: DoD's and VA's Sharing of Information Could Benefit from Improved Management," dated January 8, 2009 (GAO Code 310928).

The Department acknowledges receipt of the draft audit report and concurs with the overall findings and recommendations. We have provided several suggested technical corrections in the enclosed document.

Thank you for the opportunity to review and comment on the draft report. My points of contact for additional information are Ms. Lois Kellett, Lois.Kellett@tma.osd.mil or (703) 681-9530, and Mr. Gunther Zimmerman, Gunther.Zimmerman@tma.osd.mil or (703) 681-4360.

Sincerely,

A handwritten signature in black ink, appearing to read "S. Ward Casscells".

S. Ward Casscells, MD

Enclosures:
As stated

Government Accountability Office (GAO) Draft Report-Dated January 8, 2009
GAO 09-268 (GAO Code 310928)

“ELECTRONIC HEALTH RECORDS: DOD’S AND VA’S SHARING OF
INFORMATION COULD BENEFIT FROM IMPROVED MANAGEMENT”

DEPARTMENT OF DEFENSE COMMENTS
TO GAO RECOMMENDATIONS

RECOMMENDATION 1: GAO recommended that the Secretary of Defense and Veterans Affairs develop results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the departments’ interoperability objectives and document these goals and measures in their interoperability plans.

DoD RESPONSE: Concur. Department of Defense (DoD) will give high priority to the establishment of results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the departments’ interoperability objectives and document these goals and measures in interoperability plans.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense and Veteran Affairs use results-oriented performance goals and measures as the basis for future assessments and reporting of interoperability progress.

DoD RESPONSE: Concur. DoD will give high priority to the use of results-oriented performance goals and measures as the basis for future assessments and reporting of interoperability progress.

Appendix III: Comments from the Department of Veterans Affairs



THE SECRETARY OF VETERANS AFFAIRS
WASHINGTON

January 17, 2009

Ms. Valerie C. Melvin
Director, Human Capital and
Management Information Systems Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Ms. Melvin:

The Department of Veterans Affairs (VA) has reviewed the Government Accountability Office's (GAO) draft report, ***ELECTRONIC HEALTH RECORDS: DOD's and VA's Sharing of Information Could Benefit from Improved Management*** (GAO-09-268). We agree with your findings and concur with your recommendations.

GAO's observations have been very beneficial to us and will form the basis of discussion and action. The enclosure provides our response to your recommendations and technical comments suggested to provide clarification for the overall report's accuracy.

Sincerely yours,

A handwritten signature in black ink, appearing to read "James B. Peake".

James B. Peake, M.D.

Enclosure

Department of Veterans Affairs
Comments to Government Accountability Office (GAO) Draft Report
***ELECTRONIC HEALTH RECORDS: DOD's and VA's
Sharing of Information Could Benefit from Improved Management***
(GAO-09-268)

GAO Recommendations:

To better ensure that DOD and VA achieve interoperable electronic health record systems or capabilities, GAO recommends that the Secretaries of Defense and Veterans Affairs take the following actions:

Recommendation 1: Develop results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the Departments' interoperability objectives and document these goals and measures in their interoperability plans.

Response: Concur. VA and DoD will give high priority to the establishment of results-oriented (i.e., objective, quantifiable, and measurable) goals and associated performance measures for the Departments' interoperability objectives and document these goals and measures in interoperability plans.

Recommendation 2: Use results-oriented performance goals and measures as the basis for future assessments and reporting of interoperability progress.

Response: Concur. VA and DoD will give high priority to the use of results-oriented performance goals and measures as the basis for future assessments and reporting of interoperability progress.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Valerie C. Melvin, (202) 512-6304 or melvinv@gao.gov

Staff Acknowledgments

In addition to the contact named above, key contributions to this report were made by Mark Bird, Assistant Director; Neil Doherty; Rebecca LaPaze; J. Michael Resser; Kelly Shaw; and Eric Trout.

Related GAO Products

Information Technology: DOD and VA Have Increased Their Sharing of Health Information, but Further Actions Are Needed. [GAO-08-1158T](#). Washington, D.C.: September 24, 2008.

Electronic Health Records: DOD and VA Have Increased Their Sharing of Health Information, but More Work Remains. [GAO-08-954](#). Washington, D.C.: July 28, 2008.

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